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# Center for Environmentally Threatened Communities Newsletter

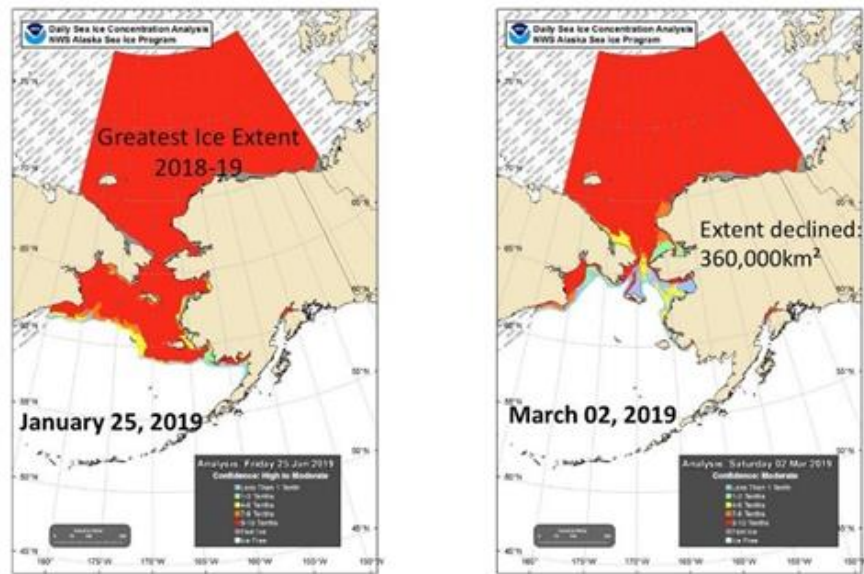
Issue 22, March 2019

## Community Perspectives on Loss of Sea Ice



Open water along the shore of Wales, Alaska, on March 5th, 2019, where there would normally be shorefast ice. Credit: Robert Tokeinna, Native Village of Wales.

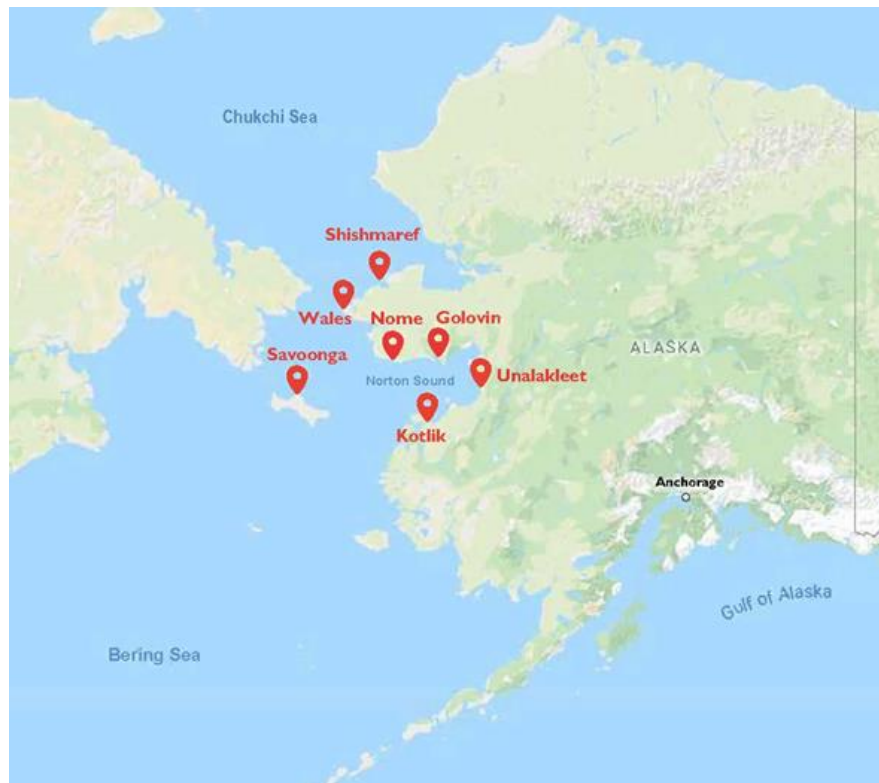
For the second year in a row, sea ice is at a [historic low in the Bering Sea](#). As of the beginning of March, the 2019 Bering Sea ice extent was the [lowest in the satellite record](#) for this time of year. As the [Anchorage Daily News reports](#), open water currently stretches across the Bering Sea from Bristol Bay in southwestern Alaska to the Seward Peninsula in northwestern Alaska. Normally, sea ice in this area would be reaching its maximum during this time of year, stretching south along much of the western coast of Alaska. Instead, winter storms throughout February obliterated the thin ice that had formed since December.



Bering Sea ice extent decreased dramatically in February. Credit: National Weather Service Sea Ice Program

No one experiences the rapidly changing sea ice in Western Alaska more personally than the communities who call the region home. For these communities, rapidly declining sea ice is more than a scientific phenomenon, it affects their daily life, subsistence hunting practices, and culture.

Here is a glimpse into how the loss of sea ice is affecting some Western Alaska communities:



The map shows communities represented by testimonials. Credit: ANTHC

**Golovin:** Normally at this time of year 12 miles of shore ice would stretch from the community toward Norton Sound. Currently, there are only eight miles of ice and Norton Sound has no ice. Golovin, Alaska relies on sea ice for safe travel in the winter, as a buffer to protect their community against winter storms, and to engage in traditional hunting and ice fishing, which is the primary food source for their families.

“My hunting teachers learned to hunt before there was outboard motors, some of them knew the ice possibly more than the ice knows itself and certainly much more than the other hunters and/or some members of their own families.” - Toby Anungazuk Jr., Golovin, Alaska.

“Our community is in a great unknown, even last year we had ice about three to four more miles further out on the Cape Darby side in May.” - Toby Anungazuk Jr., Golovin, Alaska.

**Savoonga:** Community members noted that the last two years have been very different than a typical February or March, with much more open water than before, which impacts traditional hunting practices. For the past six years, community members haven't been able to ice fish in the ocean because of dangerous, unstable ice conditions.

“Things are changing from way before - the ice condition, the weather... I don't know how the hunting season is going to be this spring. There is not enough thick ice and the weather is unpredictable.” - Myron, Vice-Mayor, Savoonga, Alaska

**Kotlik:** High water from coastal storms normally buffered by sea ice can back up into the Yukon River and cause flooding in Kotlik. This happened most recently on February 12th and was observed in a [LEO post](#) by Philomena Keyes, the community's Climate Change Coordinator.

"In Alaska, increased temperatures are melting and causing low or no sea ice in the Bering Sea/Norton Sound, which increases our risk of winter floods after strong winter storms. It also causes acceleration of erosion putting community infrastructure

and lives at risk. It's very unusual to see and hear the sea ice break and move out early as late February and early March in the Bering Sea/Norton Sound. The Bering Sea/Norton Sound is usually free of ice in late May and early June." – Victor Tonuchuk Jr., Kotlik, Alaska.

### **Unalakleet:**

"We don't have that shorefast ice for protection. Usually, that ice would protect us when the waves start coming in. We are vulnerable if we do get a southwest storm." -Davida Hanson, Unalakleet, Alaska.

**Shishmaref:** On January 27, 2019, Sharon Nayokpuk and Andrew Kakoon [observed a huge ice pile](#) along Shishmaref's ocean shoreline. Andrew wrote, "There is still open water off shore. Usually we would be on ice this time of year, traveling up and down the coast. Spring hunting should start in May."

**Nome:** Nick Treinen [observed two intersecting leads](#) (large fractures within sea ice) on February 12th, 2019. On March 9th, Nick also [observed a lead](#) around 200 yards from the shore, which continued to grow over the next days as the ice sheet broke up and departed. According to Nick, the breakup of shorefast ice historically occurs no earlier than May. Nick wrote, "Many commercial and subsistence crabbers (myself included) have lost their pots on the ice, and several miners lost property as well."

**Wales:** According to a [LEO observation](#) from Robert Tokeinna, Wales, Alaska usually has shorefast ice until June, but it is currently all gone. Robert wrote, "This is a very unusual event for Wales as many of our hunters rely on great ice conditions for whale and other sea mammal catch for food."

## **Recent Events**

### **Coastal Erosion Endangers Yup'ik Archaeological Site in Quinhagak, Alaska**



Credit: Branstetter Film, 2018, all rights reserved. [branstetterfilm.com](http://branstetterfilm.com)

In 2009, a 500-year-old artifact was discovered on the beach outside Quinhagak, Alaska, opening the door to the most productive archaeological dig in Arctic history. Sixty thousand artifacts have been recovered to date. In 2009, the site was 50 feet from the ocean. Today, coastal erosion has brought the ocean within ten feet, endangering the site. Quinhagak is among many communities in the Yukon-Kuskokwim Delta in southwestern Alaska dealing with the impacts of erosion, flooding, and permafrost degradation not only on their infrastructure, but also their history, culture, and way of life.

To learn more about the archaeological site in Quinhagak, click [here](#).

Children of the Dig is a Branstetter Film production produced in collaboration with the Nunnaleq Project, Qanirtuuq Inc., the Village of Quinhagak, and the University of Aberdeen with support from the Arts and Humanities Research Council. It was recently shown at the Alaska Forum on the Environment and the Anchorage International Film Festival.

## **Two Communities Receive Community Development Block Grants to Address Environmental Hazards**



The Chefnak Head Start school building is threatened by erosion, flooding, and permafrost degradation. Credit: Village of Chefnak

The City of Napakiak, Alaska, and the City of Chefnak, Alaska, have been awarded State of Alaska Community Development Block Grants (CDBG) to respond to erosion, flooding, and permafrost degradation impacts.

1. Napakiak was awarded \$537,200 for the **Land Use Planning for Managed Retreat** project, which will conduct a terrain analysis and geotechnical investigations to support the community in selecting a new, safe site where they can migrate threatened infrastructure to.
2. Chefnak was awarded \$122,088 for the **Head Start Building Design** project, which will allow the community to work with an architectural consultant to design a Head Start school building to replace the current one, which is imminently threatened by erosion, flooding, and permafrost degradation.

## First Peoples' and Indigenous' Peoples Declaration





Participants at the First Peoples' Convening on Climate-Forced Displacement.  
Credit: Unitarian Universalist Service Committee

Last fall, more than sixty community leaders and advocates from seven Pacific Island countries, the United States, and Bangladesh gathered in Girdwood, Alaska for The First Peoples' Convening on Climate-Forced Displacement. One outcome of the Convening was the development of the [First Peoples' and Indigenous' Peoples Declaration](#), which affirms shared principles and includes calls to action to move forward in addressing the environmental, cultural, and human impacts of climate change. Among other priorities, the declaration calls on:

1. The Conference of Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) to recognize Climate Displaced Peoples and their rights;
2. State governments to develop human rights-centered laws, policies, and strategies that address forcible displacement; and
3. Allies, friends, partners, and supporters to acknowledge and help to create spaces where indigenous community leaders can transfer indigenous and modern knowledge to their children.

For more information about the Convening, click [here](#).

## **Bureau of Indian Affairs (BIA) Tribal Program Builds Resilience Throughout Alaskan Communities**

The Bureau of Indian Affairs Tribal Resilience grant program has awarded funding to communities and organizations throughout Alaska to build resilience to extreme events and harmful environmental trends. Select examples of recent awards include:

- The Village of Kotlik will create a plan for mitigating damages caused by erosion, flooding, and extreme weather events.
- The Chugach Regional Resources Commission, a non-profit inter-tribal fish and wildlife commission, will travel to workshops, technical trainings, and cooperative entity meetings to continue work on their [climate change adaptation planning](#) and collaborative planning efforts for the [Alutiiq Pride Shellfish Hatchery](#).
- The Kodiak Area Native Association will monitor harmful algal blooms and paralytic shellfish poisoning as part of addressing threats to human health and subsistence resources.
- Igiugig Village Council will assess climate risks and develop a plan to mitigate those risks.

Click [here](#) for a summary of all Fiscal Year 2017/2018 awards.

Contact CETC to feature a recent event in your community!

## Community Profile: Unalakleet



View of Unalakleet from the south. Credit: City of Unalakleet

### Problem:



Unalakleet, Alaska is a community of approximately 744 people located on the easternmost part of Norton Sound in Western Alaska. The location provides access to many subsistence resources and has supported people for over 2,000 years. Unalakleet is vulnerable to coastal erosion and flooding, with erosion occurring both on the ocean side (at an average of one foot per year) and from the Unalakleet River (at an average of two feet per year). Erosion does not threaten the community as a whole, but at current erosion rates, the fish processing plant and some residences at the mouth of the Unalakleet River could be impacted in the near term (ten years or less). The community's water line, which runs along Norton Sound, as well as some parts of the airport, may also be lost. Storms coming in from the southwest are a threat to the community and exacerbate erosion and flooding issues. For example, during a February 2019 storm, lack of ice in Norton Sound resulted in a ten-foot storm surge that damaged the rock revetment that protects the community's water distribution line. Unalakleet won't know the full extent of the damage to the rock revetment until the snow melts later this year.

**Solution:**

To address erosion and flooding issues, Unalakleet has implemented erosion protection measures while also looking to the nearby hills to migrate homes and infrastructure away from the threat. In 2000, the Natural Resources Conservation Service constructed a 1,400-foot gabion sea wall beginning at the upstream end of the fish processing plant on the Unalakleet River and extending around the end of the spit, protecting the area of highest erosion. The fish processing plant, residential homes, and public facilities were protected by the sea wall. This protection measure was intended to be a temporary solution, with most gabions having a life range between two and ten years. Additional erosion protection measures include the rock revetment built by the Federal Emergency Management Agency (FEMA) in 2012 after a devastating storm in Fall of 2011 exposed the community's water line, which runs along the coast. Currently, the U.S. Army Corps of Engineers is constructing a revetment at the mouth of the river, which is the area of highest erosion. Meanwhile, residents are increasingly looking towards moving to the hills a short distance away from the community for protection from coastal flooding and erosion.

## Resources

### Educational Resource

Talking to kids about climate change can be difficult. Ørsted has released a children's book and a website entitled [\*Is This My Home?\*](#) as a resource for parents and teachers to have conversations with children about their changing environment. The book is available as a PDF [here](#).

### National Indian Health Board (NIHB) Climate and Health Opportunities and Resources

NIHB hosts a [webpage](#) with various resources relevant to Tribal and climate health. These include:

- A learning community you can join to participate in events, share resources, and information;
- Webinars relating to Tribal health and climate change; and
- Recently-released articles and reports on climate.

## Upcoming Events

### 2019 Southwestern Tribal Climate Change Summit (SWTCCS)

The [SWTCCS](#) will focus on climate strategies and solutions and advance Tribal resilience efforts throughout the Southwest and North America. The 2019 Summit will be an interactive leadership-style retreat with small group breakout sessions, plenary style presentations on Tribal case studies, and a climate training opportunity for student ambassadors.

- August 13th-16th, Idyllwild Arts Academy in Idyllwild, CA
- Southwestern Tribal citizens and staff receive priority registration. To apply for a spot at the 2019 Southwestern Tribal Climate Summit, click [here](#). The deadline to apply is March 31, 2019.

## News Roundup

[Can Bethel Afford the Costs of Climate Change?:](#) The costs from dealing with climate change to infrastructure, safety, and culture are becoming more visible in Bethel, Alaska, a hub community for the Yukon-Kuskokwim Delta. KYUK produced three in-depth video profiles of Bethel community members including Yup'ik Elder Eula David.

[Why America's Northernmost City is Having a Weird, Hot Winter:](#) This piece explains the effect of abnormally warm temperatures and winter storms on Utqiagvik, Alaska, which has experienced a rapid decline of solid shorefast ice.

[What Happens when the Bering Sea's Ice Disappears?:](#) Record low sea ice in 2018 (and the very low sea ice extent as of February 2019) signals that a host of changes are in store for the Arctic ecosystem – including impacts to subsistence resources and fishing and tourism industries in Alaska.

[Arctic to Face Unavoidable Impacts from Climate Change:](#) According to a report recently released by the United Nations, even if the world can cut emissions in line with the Paris Agreement, Arctic winter temperatures will rise by three to five degrees by 2050 compared to 1986 – 2005 levels. This change would threaten seventy percent of infrastructure in the Arctic due to permafrost thaw.

### About the Center for Environmentally Threatened Communities

The Center was established with a Denali Commission grant to the Alaska Native Tribal Health Consortium and supports rural Alaska communities experiencing infrastructure impacts associated with environmental threats such as flooding, erosion, and melting permafrost.

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